Syllabus „Solving HANK-models in Julia“

Instructor: Prof. Dr. Christian Bayer, University of Bonn

Content

This class aims to put students into the position to solve a HANK model using Julia. After an introduction into Julia and the coding environment, the basic parts of the solution will be discussed. The first part is the computation of the stationary equilibrium. The second concerns the dynamics of the economy.

Based on Bayer, Born, Lütticke (2020).

Prerequisites

The course participants should have solid prior knowledge of dynamic programming techniques, such as the endogenous grid method and should be familiar with perturbation techniques to solve (representative agent) dynamic stochastic general equilibrium models. They should bring some basic knowledge of Julia as a programming language.

Tuesday, December 8th

1. Set up the VSCODE environment

2. Computation of the stationary equilibrium

3. Computation of a linearized approximation of the dynamics equilibrium of the economy.

4. Modifying the Code of BBL to accommodate alternative macroeconomic environments

Homework:
1) Change the calibration to a setup, where the liquidity premium halves
   a) because of abundant government debt
   b) because the illiquid asset becomes more liquid
2) Modify the economy such that there are two sectors with separate capital stocks. The households hold as illiquid asset shares in a fund that invests each period in capital in each sector such that expected returns (including capital gains) across sectors are equal.

Tuesday January 5th

Presentation of the solution to the homework

Discussion of research ideas